

SECTION VII.—WEATHER AND DATA FOR THE MONTH.

THE WEATHER OF THE MONTH.

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[Dated: Weather Bureau, Washington, Oct. 2, 1916.]

PRESSURE.

The distribution of the mean atmospheric pressure over the United States and Canada, and the prevailing direction of the winds are graphically shown on Chart VII, while the average values for the month at the several stations, with the departures from the normal, are shown in Tables I and III.

For the month as a whole the barometric pressure averaged below normal in portions of New England and the Northern Plateau States, along the northern border, and in the Canadian Provinces; in all other sections of the country it was above the normal. The negative departures were generally small, the greatest values appearing in portions of Canada. The positive departures were also small, they being greatest in portions of the Gulf States.

The month opened with relatively high pressure in the eastern half of the country, but it was near the normal elsewhere, except in the northern Rocky Mountain region, where it was below normal. During the next several days the pressure was near the normal in most sections, except in the north-central districts where it was relatively low. From the 10th to the 14th relatively high pressure obtained in the north-central States. During the latter half of the month an occasional moderate low pressure area moved slowly across the country from the far West, each in turn being followed by moderately high pressure, but, as a whole, the pressure continued much nearer the normal than usual throughout the entire month. The pressure at the close of the month was comparatively high in the East and low in the north Pacific States, while elsewhere it was near the average.

The distribution of the HIGHS and LOWS was generally favorable for southerly winds in nearly all districts to the eastward of the Rocky Mountains, while along the Pacific coast northerly winds were of greatest frequency. Elsewhere variable winds prevailed.

TEMPERATURE.

During the early portion of the month the temperature was somewhat lower over the Lake Region and central Mississippi Valley than that during the latter part of July; but the weather continued much warmer than the average in all central and north-central parts of the country. On the other hand it was generally below the normal in the north Pacific States, and the Rocky Mountain and Plateau regions during the greater part of the first half of the month. On the 10th freezing temperature was reported in the Canadian province of Alberta, followed the next day by heavy frosts occurring in North Dakota. Frosts occurred at exposed points in Oregon and Nevada on the 18th and in portions of the Rocky Mountain States during the following few days, but warm weather prevailed in most eastern districts during this

time, unusually high temperatures being reported in the Lakes Region and to the eastward. On the 23d an area of cooler weather overspread the Plains States and the upper Lake Region, at the same time that the period of almost continuous high temperatures that had prevailed in the Southwest since the latter part of June was temporarily broken. Cooler weather, with light frosts, occurred in northern Minnesota and North Dakota on the 23th and 27th, and overspread most central and eastern districts toward the end of the month.

For the month as a whole the temperature averaged above the normal from the Great Plains States eastward, except in small areas in the eastern portions of Maine, Virginia, and North Carolina, and the southern portion of the Florida Peninsula, where it was normal or slightly below. Elsewhere it was generally below the normal, except in Washington, western Oregon, and northwestern California, where it was slightly above. The most marked excesses of temperature occurred from Oklahoma and Kansas northeastward to the upper Lake Region, where the month averaged from 3 to 6 degrees warmer than the normal, while in Utah and portions of adjoining States it was from 3 to 4 degrees cooler than the average.

PRECIPITATION.

The rainfall during the early part of the month was chiefly in the form of thundershowers and unevenly distributed, even over small areas. Fairly heavy falls occurred in portions of the Gulf States, in southeastern New Mexico, and southern Michigan, while there were beneficial amounts in parts of the Ohio Valley, Lake Region, and Gulf States, but scarcely any rain fell in Idaho, Nevada, the Pacific States, western Texas, and central Kansas. During the second decade heavy rains occurred in the Southern Plains States, the central and southern Mississippi Valley, northeastern Kentucky, northwestern Georgia, and the west-central part of the Florida Peninsula. Moderate rains fell over the larger part of the principal corn-growing States, thereby relieving, to some extent at least, the drought that had continued for some time in portions of that section.

On the evening of the 18th a tropical storm reached the lower coast of Texas, causing heavy rainfall, severe gales, and high tide. The storm moved up the Rio Grande Valley, decreasing steadily in intensity until it finally dissipated. Save in its lower coast section, Texas had very little rain during this decade, about two-thirds of the State receiving none. Likewise, no rain fell in southeastern Kansas, eastern Oklahoma, and over most of California and Nevada during this period.

During the remainder of the month the rainfall was generally light, except in the Atlantic States, the Ohio, and middle and lower Mississippi Valleys, and portions of the Gulf States, where it was moderate and occasionally heavy. There was no rain of consequence in the far northwestern States and generally from the Rocky Mountains westward.

For the month as a whole precipitation was fairly heavy in the coastal portion of the South Atlantic and

Gulf States and in small areas in Missouri, Illinois, Iowa, Michigan, and West Virginia. Many other sections from the Plains States eastward had moderate amounts, yet interspersed in nearly every region were small areas with less than 2 inches of precipitation, while a large section extending from central Texas to northern Kansas had less than 1 inch during the entire month. From the Rocky Mountains westward, except in portions of northern Idaho and Montana, there was less than half an inch of precipitation, and in considerable portions of central and southern California rain was entirely absent as usual.

RELATIVE HUMIDITY.

For the month, as a whole, the relative humidity east of the Mississippi River was generally above the normal, except in Florida, the Lake Region, and the southern portion of the Middle Atlantic States, where it was below the average. Likewise the month was relatively damper than usual in the northern border States west of the Mississippi River and from the Rocky Mountain region westward, save in Wyoming and portions of Idaho, where it was drier. In the Central and Southern Plains States, the relative humidity for the month averaged considerably below the normal. Much of this area of deficient relative humidity also experienced unusually hot, dry, weather throughout the month, which was rendered more bearable because of the low humidity which obtained, and few heat prostrations were reported.

GENERAL SUMMARY.

The weather for August, 1916, was characterized by continuous hot weather in much of the interior of the country east of the Rocky Mountains during the first two decades, but the closing days of the month showed a marked contrast to this condition. The month was unusually dry in Oklahoma, Kansas, Iowa, and portions of the adjoining States, which resulted in much damage to growing crops, especially to corn, but at the same time afforded an opportunity for harvesting and thrashing the small grain crops and for haying. From the Rocky Mountains westward the weather for the month presented no unusual features, except that in the north Pacific Coast States, especially Washington, August was an unusually dry month.

SEVERE STORMS.

The following notes of severe storms have been extracted from reports by officials of the Weather Bureau:

Texas.—A tropical storm of great intensity passed inland over the lower Texas coast between Brownsville and Corpus Christi on August 18, 1916. The center of the storm appears to have entered the State a little south of Riviera—about 45 miles southwest of Corpus Christi—moved rapidly northwestward nearly parallel to the Rio Grande, and dissipated in the Pecos Valley. The storm caused the loss of 20 lives, so far as known, and an estimated property damage of \$1,600,000. Much open cotton was beaten to the ground and immense damage was done to dwellings, churches, windmills, and other structures. The towns of Corpus Christi, Kingsville, and Bishop were perhaps the greatest sufferers, but frame houses were damaged and windmills blown down as far north as Montell, Uvalde County.

Utah.—A tornado occurred on the Sevier River, August 5. (See detailed account on p. 459.)

Average accumulated departures for August, 1916.

Districts.	Temperature.			Precipitation.			Cloudiness.		Relative humidity.	
	General mean for the current month.	Departure for the current month.	Accumulated departure since Jan. 1.	General mean for the current month.	Departure for the current month.	Accumulated departure since Jan. 1.	General mean for the current month.	Departure from the normal.	General mean for the current month.	Departure from the normal.
New England.....	68.4	+1.3	-6.3	1.87	-2.00	-1.20	4.4	-0.6	81	-1
Middle Atlantic.....	74.1	+1.3	+6.5	2.20	-2.20	-2.20	4.5	-0.6	75	-1
South Atlantic.....	79.1	+1.3	+9.2	4.25	-1.90	-7.70	5.1	-0.1	81	-1
Florida Peninsula.....	81.6	-0.3	-2.1	7.97	+1.00	-7.10	5.3	+0.1	78	-1
East Gulf.....	80.4	+1.2	+5.6	3.59	-1.20	0.00	4.9	-0.3	79	-1
West Gulf.....	82.4	+1.3	+10.8	3.00	0.00	-3.50	4.8	+0.8	73	-2
Ohio Valley and Tennessee.....	76.5	+2.1	+2.2	3.23	-0.20	-0.39	4.9	+0.4	75	+3
Lower Lakes.....	72.5	+2.9	-0.2	2.29	-0.70	-1.00	3.7	-0.9	68	-3
Upper Lakes.....	69.5	+3.2	+1.9	2.00	-0.30	+1.20	4.3	-0.4	73	-2
North Dakota.....	66.2	-0.5	-14.0	2.49	+0.20	+1.00	4.0	0.0	70	-6
Upper Mississippi Valley.....	75.6	+2.7	+4.1	3.25	+0.70	-1.20	4.3	+0.1	71	+1
Missouri Valley.....	75.8	+2.0	+3.8	3.48	+0.10	-5.30	4.1	0.0	69	+2
Northern slope.....	65.8	-1.0	-9.7	1.33	+0.10	+0.10	3.8	-0.1	58	+6
Middle slope.....	77.1	+1.9	+4.8	1.85	-6.60	-3.40	4.0	+0.2	60	+1
Southern slope.....	78.5	-0.6	+15.8	4.14	+2.00	-3.10	4.0	+0.1	60	-1
Southern Plateau.....	75.4	-1.9	-0.5	1.06	0.00	+1.10	3.4	-0.3	50	+8
Middle Plateau.....	68.0	-2.7	-2.5	0.90	+0.20	+0.40	2.6	-0.7	40	+7
Northern Plateau.....	19.7	-0.7	-14.5	0.76	+0.40	+2.20	2.6	+0.3	43	0
North Pacific.....	62.6	+0.7	-7.1	0.24	-0.60	-4.30	4.5	-0.1	76	+9
Middle Pacific.....	64.5	-0.3	+0.1	0.12	+0.10	+0.00	3.4	-0.2	61	-6
South Pacific.....	69.2	-1.3	-0.6	0.02	0.00	+4.50	2.5	-0.3	68	+2

WEATHER CONDITIONS ON THE NORTH ATLANTIC DURING AUGUST, 1915.

The data presented are for August, 1915, and comparison and study of the same should be in connection with those appearing in the REVIEW for that month.

Chart IX (XLIV-92) shows for August, 1915, the averages of pressure, temperature, and the prevailing direction of the wind at 7 a. m., 75th meridian time (Greenwich Mean Noon), together with the locations and courses of the more severe storms of the month.

PRESSURE.

The average pressure for the month, as shown on Chart IX, was remarkable for its weak gradients, and lack of any well-developed HIGHS or LOWS. While the Azores HIGH is shown on Chart IX as near its usual position it was of less intensity and of greater extent than usual. The area usually occupied by the continental HIGH was covered by a comparatively uniform pressure of about 30 inches. The Icelandic LOW was apparently shallow, although the center was too far north to come within the limits of the chart. The mean monthly barometric readings ranged from 29.86 inches in the waters adjacent to the Scandinavian Peninsula to 30.14 inches in the vicinity of the Azores, a variation considerably less than normal. Although the range in average pressure was unusually small the variation from day to day in some localities was quite marked. North of the 50th parallel and west of the 30th meridian the pressure was considerably above the monthly average during the first two and last three days of the month; it was lower than usual from the 5th to the 8th, and about the average during the remaining 22 days. Over the northeastern part of the ocean there were marked negative pressure departures during the first and last decades of the month, while between the 30th and 50th parallels the variations from the normal were comparatively small during those